

REMARKS

This is in response to the Office Action of January 12, 2007. Claims 1-7 remain pending in the application.

Claims 1-5 and 7 were rejected under 35 USC § 103(a) as being unpatentable over US 6,299,812 B1, referred to hereinafter as “Newman”, in view of Liu et al., *Science*, 280:1253-1256 (1998), referred to hereinafter as “Liu”. The rejection is respectfully traversed.

Claim 1 herein recites:

A coagulation spun structure comprising single-wall carbon nanotubes containing no binding agent or carbonaceous impurities, the structure swelling by less than about 10% in diameter when immersed in water and being produced by forming a uniform suspension in liquid of single-wall carbon nanotubes ***made from carbon monoxide at a pressure of at least 10 atmospheres***, coagulation spinning the suspension to form the structure, submitting the structure to tension, and annealing the structure under a state of tension.

Emphasis supplied. This feature of Applicants’ invention is also recited in independent claim 14. It is noted that the parent of this divisional application was allowed with claims directed to processes of making carbon nanotube structures, which processes include the recitation of the limitation “carbon nanotubes made at a pressure of at least 10 atm from carbon monoxide”.

The Examiner’s statement of the rejection of record does not allege that the Newman reference or the Liu reference suggests this important feature of Applicants’ invention. Accordingly, the Examiner has failed to state a sustainable rejection of the claims herein.

Moreover, in any case, the fact that this feature of Applicants’ invention is significant is established by the specification. The Examiner’s attention is respectfully directed to Examples 1-4. Example 1 describes a process, including utilization of single-wall carbon nanotubes

(SWNTs) made by using the high pressure carbon monoxide step recited in Applicants' claims, that makes a coagulation spun (CS) structure in accordance with Applicants' claims. Example 2, a comparative example, describes a generally similar process in which the SWNTs utilized were highly purified SWNTs obtained by purification of carbon-arc-synthesized nanotube-containing soot. This nanotube suspension broke up into short lengths upon injection in to the PVA bath. Example 3, another comparative example, describes a process generally similar to that of Example 1, in which the SWNTs utilized were highly purified SWNTs obtained by purification of laser-evaporation produced nanotube-containing soot. This nanotube suspension too broke up into short lengths upon injection in to the PVA bath. Example 4, yet another comparative example, describes a process generally similar to that of Example 1, in which the SWNTs utilized were chemically purified SWNTs obtained by purification of material synthesized by catalytic decomposition of methane at 1000°C over well-dispersed metal particles supported on zeolite. This nanotube suspension likewise broke up into short lengths upon injection in to the PVA bath.

This experimental evidence clearly establishes that the express limitation in all of the claims herein – “made from carbon monoxide at a pressure of at least 10 atmospheres” – is significant to the structural features recited in the present claims.

In summarizing the rejection at the bottom of page 3 of the Office Action, the Examiner argues that it appears that the product of Newman in view of Liu would be the same product as Applicants. Applicants' product is a real product, discovered by Applicants. The product of Newman in view of Liu is a hypothetical product, discovered not by Newman and not by Liu by the Examiner, with guidance from Applicants.

In any case – first – the Examiner has not even alleged that the prior art teaches a


structure made by coagulation spinning “single-wall carbon nanotubes containing no binding agent or carbonaceous impurities ... made from carbon monoxide at a pressure of at least 10 atmospheres”. Secondly, even if the Examiner were to establish a proper *prima facie case* of obviousness, Applicants have demonstrated by means of experimental evidence that not all SWNTs are equivalent, and that SWNTs as specified in the present claims have properties that are not shared by generally similar SWNTs outside the detailed recitation of claims 1-7 in the present application.

Accordingly, the Examiner is respectfully requested to pass this divisional application to Issue. If there are any questions, the Examiner is invited to contact Richard Gallagher (Registration No. 28,781) at (703) 205-8008.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17.

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